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## REMARKS

The Official Action dated September 13, 2006 has been received and its contents carefully noted. In view thereof, claims 1-33 have been canceled in their entirety without prejudice nor disclaimer of the subject matter set forth therein and new claims 34 and 35 have been added in order to better define that which Applicants regard as the invention. Accordingly, claims 34 and 35 are presently pending in the instant application.

Returning now to the Official Action and particularly page 2 thereof, Applicants hereby confirm the election of claims 1-4 for prosecution in the present application. As can be seen from the foregoing amendments, claims 1-4 as well as claims 5-33 which had been withdrawn from further consideration by the Examiner have been canceled in favor of new claims 34 and 35. Accordingly, further consideration of such claims is earnestly solicited.

As noted by the Examiner, with the foregoing election the title of the invention is now deemed to be not descriptive of the claimed invention. Accordingly, as can be seen from the foregoing amendments, the title of the present application has been amended to recite a "Variable Gain Amplifier". It is respectfully submitted that the title, as amended, is clearly indicative of the presently claimed invention.

With respect to the objection to the claims set forth on pages 2 and 3 of the Office Action, with the foregoing amendments, each of claims 1-4 have been canceled in their entirety without prejudice nor disclaimer of the subject matter set forth therein. Further, new claims 34 and 35 have been drafted so as not to include reference characters corresponding to elements recited in the detailed description and drawings. Accordingly, it is respectfully submitted that Applicants' claimed invention is now in proper formal condition for allowance.

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With reference now to page 3 of the Office Action, claims 1 and 2 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,870,425 issued to Leifso et al. in view of U.S. Patent No. 6,894,563 issued to Si. This rejection is respectfully traversed in that the combination proposed by the Examiner neither discloses nor suggests that which is presently set forth by Applicants' claimed invention.

Insofar as the current rejection applies to new claims 34 and 35, it is noted that new independent claim 34 recites a variable gain amplifier comprising a differential input amplifier which includes first and second transistors that constitute a differential pair, a constant current circuit that operates as an absorption current circuit for the first and second transistors constituting the differential pair, and a variable impedance which is connected between sources of the respective transistors of the differential input amplifier, wherein the constant current circuit includes a first constant current circuit and second constant current circuit, and said first and second transistors constituting said differential pair have their gates respectively connected to first and second differential inputs, having their drains respectively connected to ends of first and second load resistances being respectively connected to a supply voltage at their other end and have their source respectively connected to the first and second constant current circuits, third and fourth transistors with drain source paths of the third and fourth transistors which serve as the variable impedance are connected with the source of the respective first and second transistors, and a gain control voltage is connected to the gates of the third and fourth transistors by way of first and second gate resistances respectively, whereby a gain of the differential input amplifier is variably controlled by controlling the value of the variable impedance. That is, in accordance with Applicants' claimed invention, as set forth in independent claim 34, this claim includes first and second gate resistances which can be referred to as RG1 and RG2 from Applicants' specification,

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therefore, the peaking effect ascribable to the combined capacitance between the gate and source and between the gate and drain can be relieved. This is clearly not the case with the combination proposed by the Examiner.

Particularly, in reviewing the teachings of Leifso et al. and Si it is noted that each of these references clearly fail to disclose gate resistances which correspond to RG1 and RG2 of the present invention which are respectively connected to the gate of the third and fourth transistors. Accordingly, the circuits set forth in each of Leifso et al. and Si et al. when taken alone or in combination fail to achieve that which is presently set forth by Applicants' claimed invention. That is, each of these references or their combination fail to relieve the combined capacitance between the gate and source and between the gate and drain and consequently the peaking effect which is achieved in accordance with Applicants' claimed invention is not realized with the combination proposed by the Examiner.

Turning now to page 5 of the Office Action, claims 3 and 4 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Leifso et al. and Si as applied above and further in view of U.S. Patent No. 6,414,547 issued to Shkap. This rejection is likewise respectfully traversed in that the Shkap fails to overcome the aforementioned shortcomings associated with the combination proposed by the Examiner.

In that each of claims 3 and 4 have been canceled in their entirety without prejudice nor disclaimer of the subject matter set forth therein, it is respectfully submitted that further discussion with respect to the merits of the rejection of such claims is no longer believed to be warranted. However, insofar as such rejection applies to new claims 34 and 35, it is noted that the patent to Shkap as with the teachings of Leifso et al. and Si clearly fail to disclose that the gate resistors recited in accordance with Applicants' claimed invention such as RG1 and RG2 being respectfully connected to the gate of the third and fourth transistors.

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Consequently, the circuits set forth therein fail to relieve the combined capacitance between the gate and source and between the gate and drain as is the case with Applicants' claimed invention. Therefore, the peak effect solved in accordance with Applicants' claimed invention is not achieved with the combination proposed by the Examiner. Consequently, it is respectfully submitted that Applicants' claimed invention as set forth in each of claims 34 and 35 clearly distinguish over the combination proposed by the Examiner and are in proper condition for allowance.

Therefore, in view of the foregoing it is respectfully requested that the rejections of record be reconsidered and withdrawn by the Examiner, that claims 34 and 35 be allowed and that the application be passed to issue.

Should the Examiner believe a conference would be of benefit in expediting the prosecution of the instant application, he is hereby invited to telephone counsel to arrange such a conference.

Respectfully submitted,

  
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